

[Amdt. 173-244, 60 FR 50307, Sept. 28, 1995, as amended by Amdt. 173-244, 61 FR 20751, May 8, 1996; 63 FR 52849, Oct. 1, 1998; 65 FR 58630, Sept. 29, 2000; 66 FR 45383, Aug. 28, 2001; 69 FR 3676, Jan. 26, 2004]

**§ 173.426 Excepted packages for articles containing natural uranium or thorium.**

A manufactured article in which the sole Class 7 (radioactive) material content is natural uranium, unirradiated depleted uranium or natural thorium, and its packaging, are excepted from the requirements in this subchapter for specification packaging, labeling, marking (except for the UN identification number marking requirement described in § 173.422(a)), and if not a hazardous substance or hazardous waste, shipping papers and the requirements of this subpart if:

- (a) Each package meets the general design requirements of § 173.410;
- (b) The outer surface of the uranium or thorium is enclosed in an inactive sheath made of metal or other durable protective material;
- (c) The conditions specified in § 173.421(a) (2), (3) and (4) are met; and
- (d) The article is otherwise prepared for shipment as specified in § 173.422.

[Amdt. 173-244, 60 FR 50307, Sept. 28, 1995, as amended by Amdt. 173-244, 61 FR 20752, May 8, 1996; 69 FR 3676, Jan. 26, 2004]

**§ 173.427 Transport requirements for low specific activity (LSA) Class 7 (radioactive) material and surface contaminated objects (SCO).**

(a) In addition to other applicable requirements specified in this subchapter, LSA material and SCO must be transported in accordance with the following conditions:

- (1) The external dose rate may not exceed an external radiation level of 10 mSv/h (1 rem/h) at 3 m (10 feet) from the unshielded material;
- (2) The quantity of LSA material and SCO transported in any single conveyance may not exceed the limits specified in Table 5;
- (3) LSA material and SCO that are or contain fissile material must conform to the applicable requirements of § 173.453;
- (4) Packaged and unpackaged Class 7 (radioactive) materials must conform

to the contamination control limits specified in § 173.443;

(5) External radiation levels may not exceed those specified in § 173.441; and

(6) For LSA material and SCO consigned as exclusive use:

(i) Shipments must be loaded by the consignor and unloaded by the consignee from the conveyance or freight container in which originally loaded;

(ii) There may be no loose radioactive material in the conveyance; however, when the conveyance is the packaging, there may not be any leakage of radioactive material from the conveyance;

(iii) Packaged and unpackaged Class 7 (radioactive) material must be braced so as to prevent shifting of lading under conditions normally incident to transportation;

(iv) Specific instructions for maintenance of exclusive use shipment controls shall be provided by the offeror to the carrier. Such instructions must be included with the shipping paper information;

(v) The shipment must be placarded in accordance with subpart F of part 172 of this subchapter;

(vi) For domestic transportation only, packaged and unpackaged Class 7 (radioactive) material containing less than an A<sub>2</sub> quantity are excepted from the marking and labeling requirements of this subchapter, other than the subsidiary hazard labeling required in § 172.402(d). However, the exterior of each package or unpackaged Class 7 (radioactive) material must be stenciled or otherwise marked "RADIOACTIVE—LSA" or "RADIOACTIVE—SCO", as appropriate, and packages or unpackaged Class 7 (radioactive) material that contain a hazardous substance must be stenciled or otherwise marked with the letters "RQ" in association with the description in this paragraph (a)(6)(vi); and

(vii) Transportation by aircraft is prohibited except when transported in an industrial package in accordance with Table 6 of this section, or in an authorized Type A or Type B package.

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(b) Except as provided in paragraph (c) or (d) of this section, LSA material and SCO must be packaged as follows:

(1) In an industrial package (Type IP-1, Type IP-2 or Type IP-3; §173.411), subject to the limitations of Table 6;

(2) In a DOT Specification 7A (§178.350 of this subchapter) Type A package;

(3) In any Type B(U) or B(M) packaging authorized pursuant to §173.416;

(4) For domestic transportation of an exclusive use shipment that is less than an A<sub>2</sub> quantity, in a packaging which meets the requirements of §173.410; or

(5) In portable tanks, cargo tanks and tank cars, as provided in §173.411(b)(4) and (5), respectively.

(c) LSA-I material and SCO-I may be transported unpackaged under the following conditions:

(1) All unpackaged material, other than ores containing only naturally occurring radionuclides, must be transported in such a manner that under routine conditions of transport there will be no escape of the radioactive

contents from the conveyance nor will there be any loss of shielding;

(2) Each conveyance must be under exclusive use, except when only transporting SCO-I on which the contamination on the accessible and the inaccessible surfaces is not greater than 4.0 Bq/cm<sup>2</sup> for beta and gamma emitters and low toxicity alpha emitters and 0.4 Bq/cm<sup>2</sup> for all other alpha emitters;

(3) For SCO-I where it is reasonable to suspect that non-fixed contamination may exist on inaccessible surfaces in excess of the values specified in paragraph (c)(2) of this section, measures shall be taken to ensure that the radioactive material is not released into the conveyance or to the environment; and

(4) The highway or rail conveyance must be placarded in accordance with subpart F of part 172 of this subchapter.

(d) LSA material and SCO that exceed the packaging limits in this section must be packaged in accordance with 10 CFR part 71.

(e) Tables 5 and 6 are as follows:

TABLE 5—CONVEYANCE ACTIVITY LIMITS FOR LSA MATERIAL AND SCO

Nature of material	Activity limit for conveyances other than by inland waterway	Activity limit for hold or compartment of an inland waterway conveyance
1. LSA-I .....	No limit .....	No limit.
2. LSA-II and LSA-III; Non-combustible solids .....	No limit .....	100 A <sub>2</sub> .
3. LSA-II and LSA-III; Combustible solids and all liquids and gases.	100 A <sub>2</sub> .....	10 A <sub>2</sub> .
4. SCO .....	100 A <sub>2</sub> .....	10 A <sub>2</sub> .

TABLE 6—INDUSTRIAL PACKAGE INTEGRITY REQUIREMENTS FOR LSA MATERIAL AND SCO

Contents	Industrial packaging type	
	Exclusive use shipment	Non exclusive use shipment
1. LSA-I:		
Solid .....	Type IP-1 .....	Type IP-1.
Liquid .....	Type IP-1 .....	Type IP-2.
2. LSA-II:		
Solid .....	Type IP-2 .....	Type IP-2.
Liquid and gas .....	Type IP-2 .....	Type IP-3.
3. LSA-III .....	Type IP-2 .....	Type IP-3.
4. SCO-I .....	Type IP-1 .....	Type IP-1.
5. SCO-II .....	Type IP-2 .....	Type IP-2.

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